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ABSTRACT

The basic model of a secondary-level interdisciplinary environmental education curriculum development project being developed by the University of Georgia is described. International environmental problems require citizens to act politically either by direct participation or through the indirect but often powerful force of public opinion. Hence, environmental education must be education for political decision making. The four basic components of the model curriculum are: (1) knowledge of the scientific foundations of environmental problems, (2) insights into the trade-offs of various natural and social advantages and disadvantages involved in making environmental choices, (3) sensitivity to the public political climate within and among nations in regard to environmental issues, and (4) practice and skill in applying these other proficiencies to making thoughtful environmental decisions on public policy. Each component area is more fully described by drawing examples from some transnational problem areas of the Canadian-American environment. Course requirements and activities using the model are also described. (Author/DE)

Education for Policy Decisions On Our Continental Environment

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Canada and the United States have a long-established, multi-faceted and complex partnership. The two countries share not only 4,000 miles of border, a largely common cultural background and virtually uncountered political power on the American continent; but in addition, the two North American land giants share a portion of the earth's surface containing valuable natural resources about which there are serious environmental concerns.

Our shared environmental problems in regard to wise development, allocation and use of this natural wealth extend beyond the energy-producing resources such as oil, water, and natural gas to the food producing resources such as soil, water, air and plant life and to the raw materials utilized for mass-produced, mass-consumed goods which have become basic to the Canadian-American "standard of living."

Canadians and Americans together are confronted with a tangle of transnational questions about the quality of the environment now and in the future. Should the Ross Dam on the Skagit River be enlarged to provide more electricity for Seattle, thereby flooding over 8,000 acres of wilderness in Washington and recreation lands in British Columbia? Should the Canadian government in an effort to reduce fuel consumption continue to increase taxes and restrict prices on oil, thereby reducing the profit incentives for private

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oil drillers? What can be done about Detroit's air pollution which threatens life on both sides of the border, and who should do it?

These are but a few of the many transnational environmental questions confronting Canadians and Americans. And, it is in a political context that these questions are likely to be encountered and possibly settled. However physical and biological their foundations, however social or historical their roots, the environmental problems of democracies are public problems which must be settled in the political arenas where public policies are made.

Political decision may come in the form of formal, high-level action between the federal governments or their subunits. Or, it may appear in the form of action by state and provincial governments or regional organizations. The political response may be expressed in interest group action by groups ranging from combinations of business firms to organizations of consumers to coalitions of conservationist groups. Or, political choices may be made by individuals--voting or not voting, purchasing or not purchasing.

To influence environmental policies citizens act politically either by direct participation or through the indirect but often powerful force of public opinion. Hence, environmental education must be education for political decision-making. This does not imply political education in the narrow sense. It is not just learning to predict voting patterns, compare candidates and analyze legislative action. It is a broader notion of education for choice-making on issues affecting the public welfare in the long run. The participant roles may vary from highly active to quietly reactive. As it relates to the

environment, this education for political decision-making involves all levels of choices--to act or not to act, for or against those who might make a difference in environmental policies.

Environmental education for Canadians and Americans, then, must be a preparation for operating, as effectively as possible, in democratic political settings. To prepare students for various participant roles I am convinced that the content of environmental education must have four basic components:

1) knowledge of the scientific foundations of the environmental problems
2) insights into the trade-offs of various natural and social advantages and disadvantages involved in making environmental choices
3) sensitivity to the public political climate within and between nations in regard to environmental issues
4) practice and skill in applying these other proficiencies to making thoughtful environmental decisions on public policy

Let me describe each of these content components more fully, drawing examples from some transnational problem areas of Canadian-American environment.

The Firm Foundation

Consider the first requirement. Few educators would quarrel with the claim that basic scientific knowledge is necessary to learning for survival. Yet, seldom are there provisions in the curriculum for the development of a sound scientific foundation--including

both data and theory--which is tied directly to the environmental questions which confront us in the social-political context.

A prime example of the significance of scientific groundings for Canadian-American public policy-making can be seen in the formulation of use-preservation fishing agreements in the north Pacific. Canadian-American officials serving on the International North Pacific Fisheries Commission have based their negotiations on a scientific approach to fisheries population developed by two researchers in the field.[1] This knowledge base and conceptual framework play an important role in sharpening and shaping perceptions in the process of making decisions. On the other hand, on the same commission the lack of Japanese acceptance of a biological framework for evaluating the whale population has helped to frustrate Canadian-American efforts to reach whaling agreements with the Japanese.

To learn to gather the best knowledge available from natural science and social science is no small part of environmental education. But the knowledge base must be utilized. Knowledge components must not sit in isolation from each other or from the solution of practical problems. The data and theories of the relevant natural and social sciences must serve as underpinnings in the process of making thoughtful environmental choices.

A "Scales Mentality"

The second component advanced here is the development of insights into the process of intelligent trade-offs -- where ecological, economic, social and other advantages and disadvantages are weighed against each other in an effort to determine the choice with the least

costs. Such awareness of the trade-offs involved in environmental choice-making requires a broad perspective of the interlinkage of social and physical factors. I suppose I might call it developing a "scales mentality" -- where students learn to sort out the complex of gains, non effects and losses in any environmental action and weigh the consequences both in the short run and in the long run.

One example in Canadian-American relations is seen in the efforts to clean up the pollution in the lower Great Lakes. Weighing ecological and social costs against benefits, the decision-makers for both countries readily concluded that sewerage treatment facilities should be built near municipalities along both sides of the lakes. However, their assessments of the advantages of controlling the phosphate content of laundry detergents led to differing conclusions. Canadians put such controls into effect, apparently because such a large portion of consumers live in the Great Lakes drainage area, and direct positive effects from phosphate content of laundry detergents, apparently partially because it would not have the desired effect on the target area, but also because it would force regulation in areas where eutrophication is no problem and thus would likely irritate the laundry soap producers.[2]

Another example is seen in the Canadian-U.S. ties in the development and sale of fuel resources which had economic benefits for both countries for many years. Presently these economic advantages are less attractive, especially to Canadians, as nationalism and energy-independence are gaining in importance. But the consequences of the shift from interdependence to independence are not yet clear.

One unpredicted side effect in the complex of reactions has been the marked decline of oil drilling in Canada. Reportedly, one-fourth of the oil drillers in Canada have moved their rigs out of the country, many of them to the United States, where the price incentive is greater.[3] There are other effects, not the least of which is the general waning of continentalism in all areas of economic development, and in some cases, defensive postures or downright hostility from either side.

A Sense of the Potentials for Action

The awareness of the multiple consequences of alternative choices and the willingness to weigh these intelligently is closely linked to another component of valid environmental education which I have referred to as a "sensitivity" to the political climates in which environmental questions arise. This might be described as a sense of the potentials for action on environmental questions. It involves learning to investigate and estimate the political-social milieu from which an environmental controversy is generated and in which a decision must be made.

To continue with the example of the current Canadian-American parting of the ways on energy sources, at the roots of this division are strong currents of nationalism. Canadian public opinion is increasingly negative to further American involvement in Canadian mining and manufacturing.[4] Any influx of U.S. workers--however skilled--into the Canadian labor market is unpopular now as unemployment grows in Canada. This suggests that any proposed transnational

development of untapped Canadian energy resources is likely to be politically unacceptable in Canada now.

There are also signs of a new surge of nationalism in the U.S. The reduction of Canadian oil exports and the increase in oil prices brought sharp reactions. Some leaders in the United States are vigorously pursuing a kind of energy independence. The development of the Alaska pipeline project steps on Canadian toes by setting up a tanker route from the pipeline terminal in Valdez through the Strait of Juan de Fuca which threatens the British Columbian coastline with oil spills.

Perhaps the political climate for environmental action in each country right now can best be characterized by the remarks of two officials. Early last year Canadian Energy Minister Donald MacDonald was in Washington addressing "the misconception in America" that Canada has "a vast surplus of low-cost oil and natural gas which we are capriciously withholding from the United States at its time of need." Meanwhile, Senator Richard Schweiker of Pennsylvania was telling his constituents about the increases in Canadian oil prices and complaining that "for Canada to gouge us at this time I think is un-American."[5] (!)

The development of a sensitivity to political climate, however, should not be narrowed to official and top level dispositions. Various currents of opinion must be taken into consideration in the analytical process of determining potentials for action. For example, another level of political opinion on energy and resources is evident in the current mood of greater transnational vigilance by cooperative

conservationist and environmentalist interest groups in both Canada and the United States. In the past only a few American organizations, such as the Sierra Club, have had Canadian branches. Canadians had formed their own environmental groups, such as Pollution Probe in the Toronto area, and some of these were rather anti-U.S. in tone. Last year a number of Canadian and American environmental interest groups moved to broaden their perspectives and consequently their political influence. In Toronto last November the major environmental organizations in both countries united to form the Canada-United States Environmental Council. CUSEC was formed with co-chairpersons -- one in Ottawa and the other in Washington. At a subsequent meeting in Arlington, Virginia, last Spring the organization turned out a series of position statements on key Canadian-American environmental issues.

A full examination of viewpoints on energy and resources would include yet another level of political opinion, i.e., the voices of the multinational business firms in both countries. The substance and tenor of their statements must be taken into account in any attempt to understand Canadian-American environmental affairs. (It should be evident here that to develop an awareness of political climates the teacher will need media which contain first-hand, statements from various groups responding to the environmental situation.)

Making Choices

Given a scientific knowledge base, insights into the process of trading-off advantages and a sensitivity to the political climates

related to the issue, students of environmental problems need then to try their hands at making thoughtful policy decisions. This application component of environmental education is important to encouraging a carryover to everyday life.

For example, one issue area in which students might be called upon to make a decision is the pricing of fossil fuels. This issue, in addition to the local and regional concerns it raises within both countries, has transnational implications. The energy-consuming areas, which are the more populous sections of both nations, tend to have more in common with each other than they do with the energy-producing areas of their own countries. Ontario, Illinois and New York tend to support policies which would bring about lower fuel prices to benefit their large consumer populations. Alberta, Oklahoma and Texas, on the other hand, tend to support policies which promote higher fuel pricing to benefit the many people in their states involved in fuel production and distribution. Pricing problems also open up a highly related issue, that of developing alternative energy sources.

Students involved in a role play or other learning activity which would require them to make a choice would have to delve into a full range of scientific and social questions about reserves, pricing effects and alternative fuels. They would have to consider the effects of pricing on fuel consumption and on production. They would need to investigate the likely economic, social and political effects of continued dependence on these fuels. They would need to know something about the scientific state of development of other energy

sources. In this way, students are immersed not only in the specific problem of the environment but also in the more general problem of making an informed decision.

Applying The Model

When such a definite position is stated on what environmental education should be, the obvious question that arises is whether the proposed model can be applied in the schools.

Presently, at the University of Georgia, through a curriculum development project titled "Environmental Education for the Secondary School" a team of science educators and social studies educators is working to attempt to apply essentials of this model in the high schools of the Gwinnett County School District located in suburban metro-Atlanta.

Although the focus of content is local and national rather than transnational as projected here today, the program aims to prepare students to make environmental decisions. The high school program we are developing is essentially based on the four components discussed above.

Supported by funding from the U.S. Office of Education the project staff has set out to:

1) Provide a sound knowledge base through parallel course content in social studies and science drawing from the concepts, data, theories and skills of the disciplines of those subject areas. Hence, in a ninth grade biology the students will study the effects of rapid population growth on biotic systems while

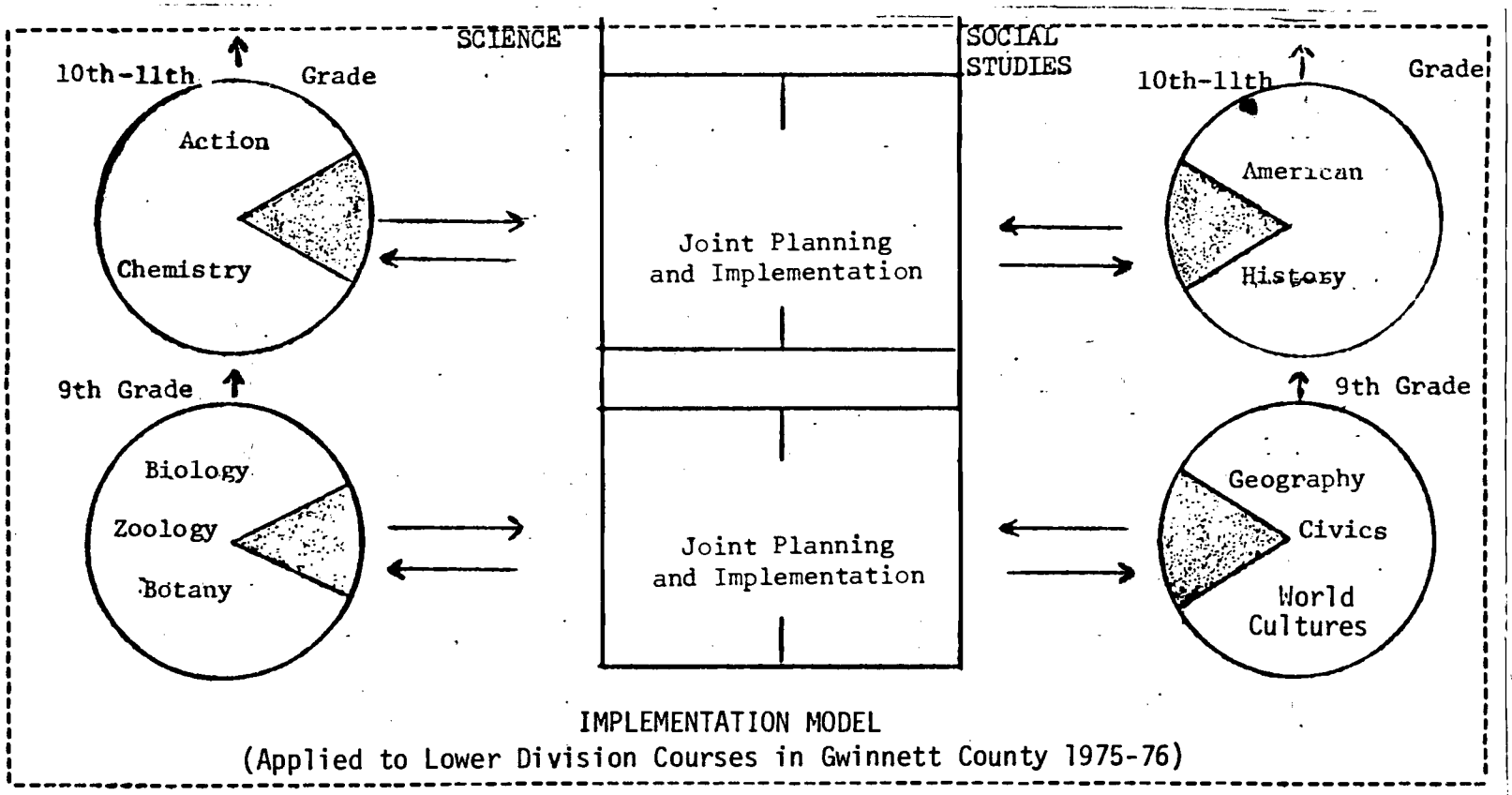
in the ninth grade geography course they study population patterns and the effects of rapid growth on their own local social, economic and political systems.

We have chosen this cross-departmental means to inter-disciplinary education because it offers a broader, deeper knowledge base, and it provides for several years continuity in environmental education which a one-shot single environmental education course cannot do. (See Figure 1).

2) To promote awareness and insight into "the give and take" (the trade-offs) of public policy determination, the alternatives for action on several major problems in the local area -- land-use planning, sewerage disposal and water supply -- are being set down in terms of the trade-offs or consequences. Students are asked to weigh costs and advantages of inaction and of various proposed "solutions" considering their effects on their own local area and on the larger statewide and national communities.

3) Project staff members have become first-hand observers of the political climate of the county-community through extensive personal interviews of community leaders, daily reading of the county newspaper and observation of government, business and citizen groups. To develop sensitivity to the clusters of political opinions on environmental issues, we are preparing to convey the political climate to students partly through a series of instructional field activities and partly through reading materials.

FIGURE 1



IMPLEMENTATION MODEL
(Applied to Lower Division Courses in Gwinnett County 1975-76)

4) In an effort to give the students practice and some skill in making decisions about environmental policy, in each segment of the program the students will be participants in an in-depth case study which involves field investigation in the local area, examination of scientific and social science data (e.g. water table charts, land form maps, drainage diagrams, and population maps) exchange of viewpoints and formation of individual policy preferences, culminating in a group policy decision.

By careful inclusion of these content components, the materials and instructions are aimed at promoting environmental awareness and citizen action based on informed decision-making.

Implementation of the program in ninth and tenth grade science and social studies courses is designed to provide continuity and depth over two years. By this time next year results from several types of tests of outcomes will be available. Students will be tested for cognitive and affective change, and teacher evaluations of the materials and program will be collected.

In an effort to make the interdisciplinary and analytical treatment of environmental problems realistic and personal the focus of the current development program is on issues of the local community. The logical extension of the materials focus and the instructional model is to national and transnational questions of the environment. Students must develop a sense of the interrelatedness of the effects of decisions on this continent and beyond. This is the obvious

next step in the pilot project I have described. To prepare for policy decisions on our continental environment students must learn to apply the skills of environmental choice-making in a global context. For if we have learned nothing else from various environmental crises of the past 15 years, Canadians and Americans alike must not forget that twentieth century earth is "a small world."

References

1. Anthony Scott, "Fisheries, Pollution and Canadian-American Transnational Relations," International Organization, Vol. 28, Autumn, 1974, pp. 828-848.

2. Ibid.

3. Reggi Ann Dubin, "The Feud That Keeps Canada's Oil Underground," Business Week, February 10, 1975, p. 46.

4. Congressional Quarterly, "Canada Wary of U. S. Energy Sharing Plans," in Continuing Energy Crisis in America. (Washington, D. C., Congressional Quarterly, Inc., 1975) pp. 53-59.

5. Congressional Quarterly, Op. cit. pp. 53-54.

6. For a fuller discussion of this joint secondary science-social science environmental education rationale see Mary A. Hepburn and Ronald D. Simpson, "Can the Curriculum Save Us?" The Social Studies, March/April, 1975, pp. 65-69.